

## Nine new species and two new subspecies of the genus *Milionia* Walker (Geometridae, Ennominae)

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**Abstract** The following nine new species and two new subspecies of the genus *Milionia* are described, with illustrations of moths and male genitalia. *M. cuneiformis* (Sulawesi), *M. basicyanea* (Irian Jaya), *M. endoi* (Irian Jaya, Biak I.), *M. mediorubra* (Irian Jaya), *M. amabilis* (Irian Jaya), *M. baliensis* (Java, Bali, Sumbawa), *M. baliensis amethystea* (Palawan), *M. treadawayi* (Mindanao), *M. treadawayi negrosensis* (Mindoro, Negros), *M. laevigata* (Mindoro, Panay, Negros) and *M. costidepressa* (Negros, Mindanao). *M. lamprobasis* Inoue, 1992 from Mindanao is newly synonymized with *M. coalescens* Semper, 1901.

**Key words** *Milionia*, Sulawesi, Papua New Guinea, Irian Jaya, Biak Is, Java, Bali, Sumbawa, Luzon, Mindoro, Panay, Negros, Mindanao, Palawan, nominotypical, synonym.

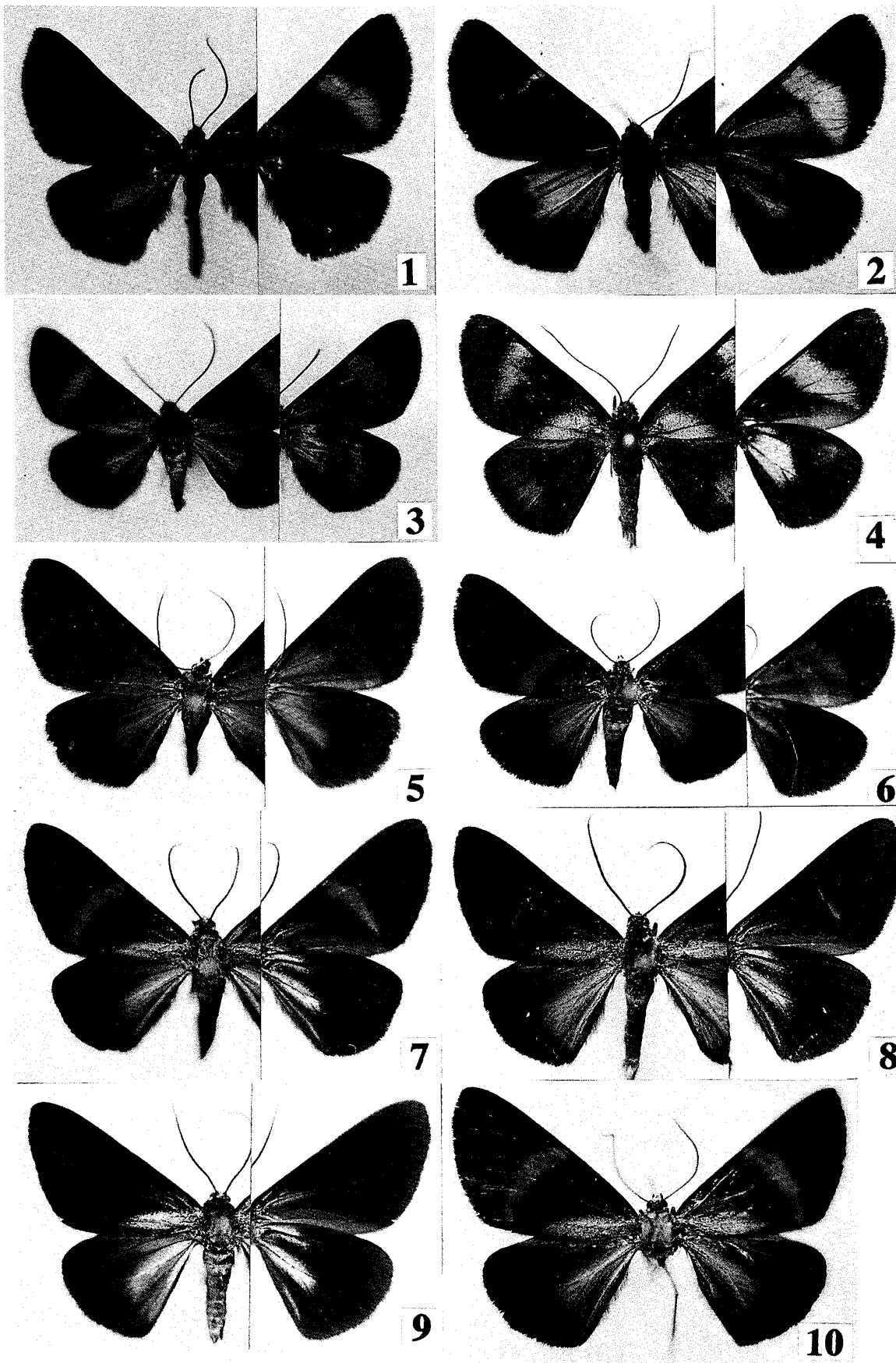
In writing this paper I am much indebted to the kind assistance of the following colleagues belonging to museums and possessors of private collections. Mr D. J. Carter, Department of Entomology, The Natural History Museum, London (acronym: BMNH)) for his kind offices in studying the rich collection of *Milionia* under his care. Mr G. Nishida, Department of Natural Science, Bishop Museum, Honolulu (BMH), sent me as a loan specimens from Papua New Guinea. Dr M. Owada, Department of Zoology, National Science Museum, Tokyo (NSMT) lent me specimens under his care, and he kindly took microphotographs of the male genitalia illustrated in this paper. Dr D. Stünig, Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn (ZFMK), gave me important information about Mr C. G. Treadaway's rich collection and some other specimens from the Philippines and he also presented me some duplicate specimens. The Treadaway collection will eventually be deposited in Senckenberg-Museum, Frankfurt am Main, but some paratypes will be kept in ZFMK. Messrs T. Endo, Tokyo (TE) and T. Masui, Takamatsu (TM), supplied me data of specimens in their private collections and gave me some duplicate specimens. Mr S. Sugi, Tokyo (SS), furnished me with Mr S. Morinaka's collection.

Unless stated otherwise, all the specimens recorded in this paper including the type-series are at present in my private collection. They will be transferred to The Natural History Museum, London (BMNH), after the close of my research works on this genus.

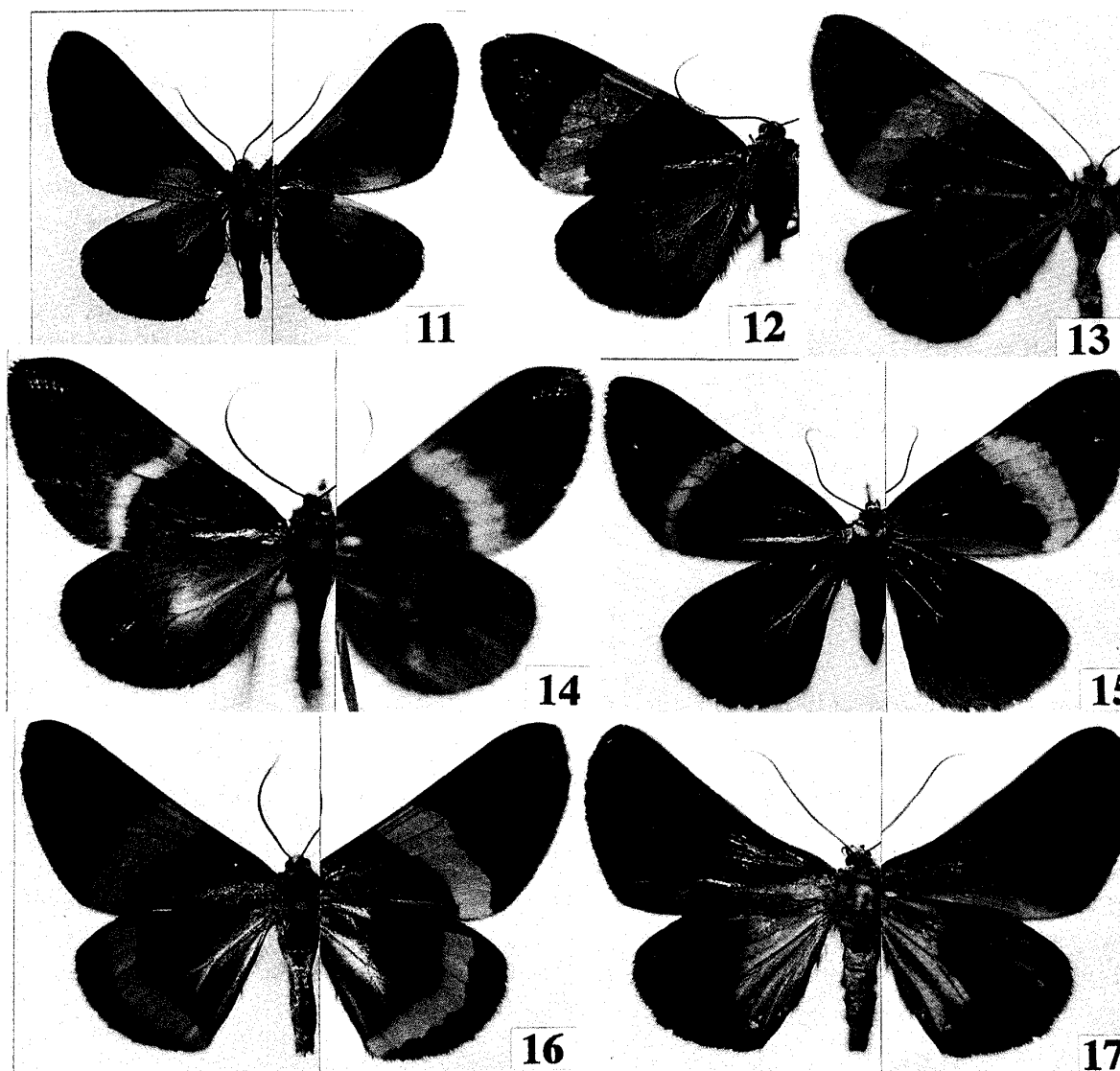
### *Milionia cuneiformis* sp. nov. (Figs 1, 2)

Male. Wingspan 39–40 mm. Antenna strongly ciliated. Frons black, centre of hair-tuft lustrous greenish blue, vertex and base of patagium strongly mixed with lustrous greenish blue scales, thorax and abdomen above black, side of abdomen and terminal 3–4 tergites strongly mixed with lustrous hair and scales. Ventral surface of body lustrous black. Forewing with termen very weakly oblique, gibbous at middle. Ground colour velvety black, narrow red postmedian fascia nearly straight from costa to the middle of discocellulars, then excurved to vein 4 and again downcurved, running into tornus. The fascia accompanied externally with









Figs 11-17. *Milionia* spp. Wingspan in parentheses. 11. *M. endoi* sp. nov. (42 mm). Holotype, ♂. 12. *M. philippinensis* Rothschild, ♂ (64 mm). 13. *Ditto*, ♀ (64 mm). 14. *M. treadawayi* sp. nov. (61 mm). Paratype, ♂. 15. *M. treadawayi negrosensis* subsp. nov. (55 mm). Paratype, ♀. 16. *M. laevigata* sp. nov. (55 mm). Holotype, ♂. 17. *M. costidepressa* sp. nov. (57 mm). Holotype, ♂.

greenish blue scales or not. Usually the fascia becoming very narrow from the angle at vein 4 or vanishing there to a point close to tornus. Hindwing with basal two-thirds strongly glossy greenish blue, the remaining part velvety black with bluish iridescence. Under surface: forewing with a broad lustrous greenish blue band and a narrow streak of the same colour on dorsal margin of cell and a broad fascia below cell from base to the postmedian band.

Figs 1-10. *Milionia* spp. Wingspan in parentheses. 1. *M. cuneiformis* sp. nov. (40 mm). Holotype, ♂. 2. *Ditto* (44 mm). Paratype, ♀. 3. *M. basicyanea* sp. nov. (36 mm). Holotype, ♂. 4. *M. hypercallima* Bethune-Baker, ♂ (41 mm). 5. *M. mediorubra* sp. nov. (38 mm). Holotype, ♂. 6. *M. amabilis* sp. nov. (38 mm). Holotype, ♂. 7. *M. baliensis* sp. nov. (42 mm). Holotype, ♂. 8. *Ditto* (43 mm). Paratype, ♂. 9. *Ditto* (42 mm). Paratype, ♂. 10. *Ditto* (44 mm). Paratype, ♀.



Hindwing dull black, lustrous greenish blue scales at extreme base.

Female. Wingspan 45–46 mm. Frons more strongly shining with greenish hair than in male, but abdomen very weakly mixed with blue scales and hair. Forewing with red postmedian fascia externally margined with a lustrous blue line or more whitish fascia. The fascia sometimes very narrow and vanishing at posterior half as illustrated, but sometimes broader and continuing to tornus. Under surface as in male, but the longitudinal lustrous greenish blue fasciae from base on both wings more developed.

Male genitalia (Fig. 18). Valva rather ample, costa convex at middle. Cucullus covered with thin setae, harpe a digitate process with rounded tip, spinulose. Ventral area of valva broadly sclerotized, rounded below harpe, strongly setose along margin. Aedeagus about as long as valva, terminating in a sharp point, cornutus beak-shaped.

Material examined. Holotype, ♂: S. Sulawesi: near North border, Puncak Dingin, 1,700 m, ix–x. 1985 (S. Nagai). Paratypes. Data as holotype, 1 ♂. In coll. TE: S. Sulawesi: type-locality, 18. x. 1985, 1 ♀; Pulu Pulu, ii. 1989, 1 ♀; *ditto*, iv. 1990, 1 ♂ 1 ♀. In coll. TM: type-locality, 2,000 m, 14–21. x. 1985, 1 ♀ (S. Nagai).

Distribution. S. Sulawesi.

***Milionia basicyanea* sp. nov.** (Fig. 3)

Male. Wingspan 36 mm. A close relative of *M. hypercallima* Bethune-Baker, 1915 (= *callima* Bethune-Baker, 1910, nom. preocc.) from Irian Jaya (Fig. 4), but smaller. Both wings with lustrous streaks and band more greenish. Forewing with tornus more roundish, hindmarginal streak narrower and more extended outward, postmedian fascia more complete than in *hypercallima*, running into termen. Hindwing with a broad basal central streak and a narrow one near hindmargin. Under surface: forewing with basal streaks developed, while in *hypercallima* they are absent, postmedian broad fascia gently curved. Hindwing with similar postmedian fascia, while in *hypercallima* it is absent.

Female unknown.

Material examined. Holotype, ♂: labelled: Hollandia [=Jayapura, Irian Jaya], N. G. 1,000 m, September 1932, rec. from Janson; Rothschild Bequest B. M. 1939-1. Only a single male in coll. BMNH. The genitalia have not been mounted.

Distribution. Irian Jaya.

***Milionia endoi* sp. nov.** (Fig. 11)

Male. Wingspan 40–46 mm. Antenna ciliated. Frons and patagium strongly metallic greenish blue, abdomen above metallic blue at posterior half. Ventral surface of body black. Forewing with termen similar to the preceding species, more oblique than in *cuneiformis* sp. nov. Both wings black, finely spangled with bluish purple. Forewing with a large triangular basal patch of lustrous greenish blue, not reaching base and costal area. The shape of the patch somewhat similar to *M. callima* Rothschild & Jordan, 1905 from Papua New Guinea and Irian Jaya, but its outer margin less oblique, reaching middle of hindmargin. Hindwing with the same coloured subbasal band, costal margin tinged with pink or reddish yellow from base to two-thirds. Under surface: black, much more weakly spangled, weak metallic greenish blue streaks at basal-subcostal areas of both wings. Forewing with broad



scarlet antemedian band and hindwing with a much broader band, its proximal margin nearly straight but the distal margin nearly parallel with termen. Often the band of forewing changing to ochreous at hindmargin and subcostal area.

Male genitalia (Fig. 19). Valva with costal margin almost straight. Cucullus much narrower than in *cuneiformis* sp. nov., decorated with much stronger spines at margin, digitate harpe much smaller, nearly naked at apex. Posterior sclerotization of valva a long stick-like process parallel with ventral margin, terminating in less than 10 setae. Aedeagus a little longer than valva, cornutus much smaller than in *cuneiformis* sp. nov.

Female unknown.

Material examined. Holotype, ♂: Irian Jaya: Ilu, Sudirman Mts, iv. 1991 (Morinaka), ex SS. Paratypes. Irian Jaya: Ilaga, ii. 1991, 6 ♂; type-locality, v. 1998, 5 ♂. In coll. TE: Ilaga, Sudirman Mts, iii. 1990, 2 ♂; *ditto*, vi. 1990, 40 ♂; *ditto*, ii. 1991, 19 ♂; type-locality, v. 1998, 9 ♂; *ditto*, viii. 1998, 3 ♂; Mt Mapia, Nabire, ii. 1988, 2 ♂; *ditto*, iii. 1988, 3 ♂; Manokwari, vi. 1986, 1 ♂; Biak I., xii. 1990, 1 ♂. In coll. TM: type-locality, iv. 1990, 1 ♂. In BMNH there is a male labelled: I. off W. Java, Kamodjan, 10. v. 1917, B. M. 1922-165, but its occurrence in Sundaland is not credible.

Distribution. Irian Jaya, Biak I.

### ***Milionia mediorubra* sp. nov.** (Fig. 5)

Male. Wingspan 37–41 mm. Antenna nearly filiform. Frons metallic blue at centre, vertex, patagium and tegula strongly shining with the same colour. Abdomen above metallic blue, but weakly so in several basal segments. Body below lustreless black, with strongly iridescent legs.

Size, shape and maculation of both wings similar to *M. isodoxa* Prout, 1923, from Papua New Guinea and Irian Jaya, but wings a little ampler, basal one-third of forewing and one-half of hindwing shining with metallic blue, without greenish tone of *isodoxa*. Forewing with narrow scarlet postmedian fascia, a little over 2 mm at middle, while in *isodoxa* about 3 mm; very weakly arched, reaching a little proximal to tornus. Under surface similar to upper, but basal metallic blue area more extended outward, forewing with scarlet fascia changing to ochre at hindmargin. Hindwing with three broad blue streaks and a narrow long one along hindmargin.

Male genitalia (Fig. 20). Valva slender with straight costa. Cucullus occupying narrow apical area of valva, densely setose. Digitate harpe covered with thick spines, while in *isodoxa* it is spineless. Valva without sclerotized area at ventral side, but a string-like sclerotization extending from base of sacculus to near base of costa. In *isodoxa* a setal patch is present at the extension of sacculus, as in *endoi* sp. nov. Aedeagus broad, much longer than valva, cornutus prominent.

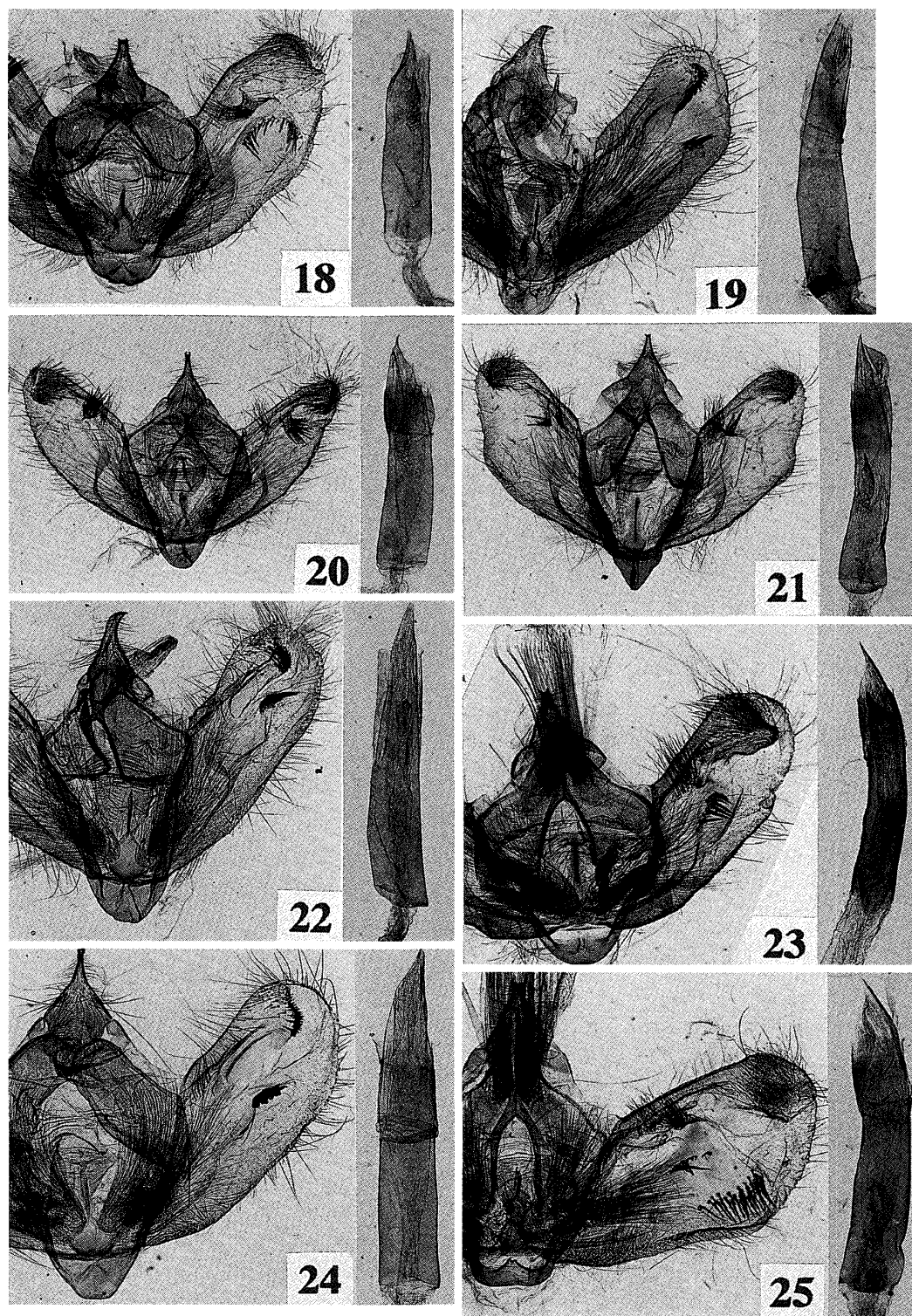
Female unknown.

Material examined. Holotype, ♂: Irian Jaya: Ilu, Sudirman Mts, viii. 1998. Paratypes. Data as holotype, 1 ♂. Ilaga, Sudirman Mts, 11. 1991, 5 ♂. In coll. TE: type-locality, v & viii. 1998, 3 ♂; Ilaga, iii & vii. 1990, 31 ♂; *ditto*, ii. 1991, 14 ♂.

Distribution. Irian Jaya.

In *isodoxa* male antenna is finely ciliated, but in this new species it is simple. It is also





Figs 18–25. Male genitalia of *Milonia* spp. 18. *M. cuneiformis* sp. nov. (HI Slide 16067). 19. *M. endoi* sp. nov. (HI Slide 16767). 20. *M. mediorubra* sp. nov. (HI Slide 16762). 21. *M. amabilis* sp. nov. (HI Slide 16763). 22. *M. baliensis* sp. nov. (HI Slide 16765). 23. *M. treadawayi* sp. nov. (HI Slide 16811). 24. *M. laevigata* sp. nov. (HI Slide 16777). 25. *M. costidepressa* sp. nov. (HI Slide 16805).



similar to *M. aroensis* Rothschild, 1904 from Papua New Guinea and Irian Jaya, but smaller with a narrower scarlet band on forewing and valva of male genitalia is more slender, with digitate harpe longer, placed midway between apex and base of costa, while in *aroensis* it is nearer to the base.

***Milionia amabilis* sp. nov.** (Fig. 6)

Male. Wingspan 35–38 mm. Antenna ciliated. Frons finely lustered with blue hair, vertex and patagium very weakly mixed with lustrous scales. Dorsal surface of abdomen strongly iridescent with blue.

Shape of wings nearly identical with *isodoxa*. Wings velvety black, with weak purplish iridescence, darker than in *isodoxa* and the preceding species. Forewing with a short lustrous blue streak from basal area on vein 1, hindwing with the same coloured patch at basal half, excepting costal area above cell. Forewing with scarlet median fascia running to a little beyond middle of hindmargin. The fascia almost straight or weakly arched, nearly touching costal margin or not. Under surface: forewing lustrous blue from base to discocellulars, costal area black, but hindmarginal area much paler, the scarlet fascia of upper surface reproduced, but a little paler and changing to ochre posteriorly. Hindwing black, with short lustrous basal streaks above and below cell.

Male genitalia (Fig. 21). Valva ample, costa straight. Very similar to those of *aroensis*, but cucullus smaller, digitate harpe with longer spines. Aedeagus much longer than valva, cornutus well-developed.

Female unknown.

Material examined. Holotype, ♂: Irian Jaya: Ilu, Sudirman Mts, v. 1998. Paratypes. Irian Jaya: Mulia-Sinak, viii & x. 1990, 2 ♂ (Morinaka), ex SS; Ilaga, ii. 1991, 8 ♂; Ilu, v & viii. 1998, 2 ♂. In coll. TE: Ilaga, iii & vii, 1990, 53 ♂; *ditto*, ii. 1991, 22 ♂; Ilu, viii. 1998, 3 ♂.

Distribution. Irian Jaya.

Somewhat similar to *E. rubrigrigata* Bethune-Baker, 1910 from Papua New Guinea, but smaller, forewing with the scarlet median fascia usually gently curved and on under surface not restricted to hindmarginal area and the lustrous blue area more extended outward.

***Milionia baliensis* sp. nov.** (Figs 7–10)

Male. Wingspan 40–46 mm. Antenna strongly ciliated. Frons, vertex, patagium, tegula, thorax and abdomen above strongly iridescent with lustrous greenish blue from base to tip.

Shape of wings nearly as in *endoi*; velvety black with deep purple gloss. Both wings with metallic greenish blue streaks, on forewing the posterior one extending to middle or two-thirds from base, on hindwing it extended to two-thirds or more. Forewing with a narrow red bar or postmedian fascia crossing discocellulars whose development is unstable: sometimes extended to near tornus, but often vanishing near vein 2 and sometimes vestigial or entirely absent. When the fascia is developed, its distal margin is angled at the origin of vein 5. Under surface dull black, nearly as upper, but the basal lustrous streaks much shorter.

Female. Wingspan 44 mm. Wings ampler, the purple-gloss on the black ground weaker than in male. Forewing with red fascia broader and more complete.



Male genitalia (Fig. 22). Valva similar to *endoi* sp. nov., but cucullus more roundish. Harpe a long stick-like process, with strongly setose apex, central area along sacculus sclerotized. Aedeagus longer than valva, cornutus rather small, with minute tip.

Material examined. Holotype, ♂: Bali West, vii. 1992. Paratypes. Data as holotype, 22 ♂ 1 ♀. In coll. TE: Bali, vi–ix. 1989, 50 ♂; *ditto*, ix. 1991, 59 ♂; Sumbawa, xii. 1992, 3 ♂; Mt Slamet, C Java, iv. 1988, 1 ♂; Mt Argopuro, E Java, x. 1992, 1 ♂ 1 ♀. In coll. TM: Bali, ix–x. 1989, 15 ♂. In coll. ZFMK: C Bali: Buyan Lake, 1,300 m, 10. ii. 1997, 1 ♂ 3 ♀ (K. Cerny).

Distribution. Java, Bali, Sumbawa.

Somewhat similar to *M. talboti* Prout, 1922 from Seram, but built more robustly, greenish blue streaks of both wings more developed and the red fascia on forewing of female not so straight.

***Milionia baliensis amethystea* subsp. nov.**

Wingspan: ♂ 53–55 mm, ♀ 55–58 mm. Much larger than the nominotypical subspecies. Both wings with metallic greenish blue streaks broader, more extended outward especially on under surface. The genitalia of both sexes are almost identical with the nominotypical subspecies.

Material examined. Holotype, ♂: C Palawan: Langan, iii. 1979, Collection C. G. Treadaway, ex ZFMK. Paratypes. S Palawan: Brookes Point, 10. iv. 1989, 1 ♂ 1 ♀ (Roy Roderiguez), Collection C. G. Treadaway, ex ZFMK. In coll. TE: S Palawan, 1 ♂ 2 ♀. In coll. TM: Palawan, ix. 1990, 1 ♀. In coll. ZFMK: S Palawan: Mt Bayong, Brookes Point, ix. 1984, 1 ♂; Mt Tuba, Bookes Point, 4. viii. 1983, 1 ♀; Makagua, 5. iii. 1996, 1 ♀; nr Brookes Point, 18. i. 1998, 3 ♂; Mt Gantung, 13. vi. 1998, 1 ♂ 1 ♀; Mt Salakot, 720 m (heli-pad), 19. vii. 1996 [day-flying], 1 ♀ (A. Zwick); Mt Mantalingahan, near top, 1,700 m, 17. iii. 1999, 1 ♂ (A. Zwick & S. Verdeprado), ex Senckenberg-Museum.

Distribution. Philippines (Palawan).

In the male of the nominotypical subspecies the development of the red fascia on forewing is unstable as described above, but in the Palawan subspecies reduction or absence of the fascia has not been observed by me.

This subspecies is ostensibly similar to *M. fulgida* van Vollenhoven from Java, but larger, forewing with termen less straightish, red fascia less complete, hindwing with basal metallic blue area much less developed, being represented by streaks, while in *fulgida* the metallic area is greenish blue (*cf.* Holloway, 1993: 170).

***Milionia treadawayi* sp. nov.** (Fig. 14)

Male & female. Wingspan 57–64 mm. Antenna in male strongly ciliated. Frons black, thickly covered with lustrous blue scales at ventral part, patagium covered with the same coloured hair, tegula with black hair. Abdomen above black, very weakly lustrous, below sooty black. Both wings sooty black. Forewing with lustrous greenish blue streaks above and below cell very short and narrow, postmedian fascia 2 mm or a little less in width, pinkish or yellowish red, straight or a little concave between costa and lower angle of discocellulars, then downcurved to tornus. The fascia has shining blue scales at both



margins. Hindwing covered with iridescent greenish blue from base to subterminal area, especially strongly shining on discocellulars and posterior margin of cell. Under surface: lustreless sooty black, forewing with broad orange postmedian fascia, hindwing unmarked.

Male genitalia (Fig. 23). Dorsal part of tegumen thickly covered with a mass of deciduous flat hair. Harpe triangularly produced downward, covered with thin spines, a setose pad near base below costa. Valva broadly sclerotized at ventral area, with a setose area at middle. Aedeagus nearly as long as valva, cornutus large with triangular tip.

Material examined. Holotype, ♂: Mindanao: Mt Kitanglad, vii. 1989. Paratypes. Type-locality, 1,650–2,200 m, viii. 1993, 2 ♂ 2 ♀ (V. Sinjaev & A. Schintlmeister), ex ZFMK; Mt Imbayaw, 1991, 1 ♀. In coll. TE: Mindanao: Bukidnon, iv & v. 1991, 3 ♀. In coll. TM: Mt Imbayaw, iv & v. 1991, 4 ♀; type-locality, 24. xii. 1993, 1 ♀. In coll. ZFMK: type-locality, 1,650 m, viii. 1993, 5 ♂; *ditto*, 1,700 m, 35 ♂ 9 ♀; *ditto*, 2,200 m, 15. viii–15. ix. 1993, 37 ♂ 32 ♀; *ditto*, 2,400 m, 4. viii. 1993, 1 ♀ (V. Sinjaev & A. Schintlmeister); type-locality, 1,800 m, 9. i. 1995, 1 ♀; *ditto*, 7,010 ft, 6. i. 1995, 1 ♀; *ditto*, 1,700 m, 9. vi. 1995, 1 ♀; Mt Kalatungan, 27. vi. 1998, 1 ♀ (C. G. Treadaway).

Distribution. Philippines (Mindanao).

Probably a geographic representative of *M. philippinensis* Rothschild, 1895 (Figs 12, 13) from Luzon, to which the structure of male genitalia is almost identical, but on an average smaller, ground colour blacker, postmedian fascia of forewing much narrower, less reddish and hindwing with strongly iridescent discocellulars.

Mr C. G. Treadaway's contributions to the Philippine Lepidoptera are remarkable and hence I have a pleasure to dedicate him this new species.

***Milionia treadawayi negrosensis* subsp. nov.** (Fig. 15)

Male & female. Wingspan 52–55 mm. Smaller than the nominotypical subspecies. Forewing with lustrous greenish blue streak on vein 1 longer, postmedian fascia redder as in *philippinensis*, more gently arched, more weakly lustrous on the fascia. Hindwing with more strongly shining greenish blue area less extended outward, leaving much wider sooty black terminal area. Under surface: both wings with slender basal streaks of greenish blue, which are almost or completely absent in the nominotypical subspecies, the orange postmedian fascia much broader.

The genitalia are identical with those of the nominotypical subspecies.

Material examined. Holotype, ♂: Negros: Mt Canlaon, 1995. Paratypes. Type-locality, 27. iii. 1998, 2 ♂ 1 ♀. In coll. TE: Mindoro: Mt Halcon, iv. 1999, 1 ♂. In coll. TM: type-locality, 27 & 28. iii. 1998, 2 ♂ 11 ♀. In coll. ZFMK: type-locality, 27–28. vii. 1995, 7 ♂ 3 ♀ (C. G. Treadaway).

Distribution. Philippines (Mindoro, Negros).

***Milionia laevigata* sp. nov.** (Fig. 16)

*Milionia coalescens*: Inoue, 1992: 161, fig. 29, *nec* Semper, 1901.

Male & female. Wingspan 50–56 mm. Closely related to *M. coalescens* Semper, 1901 from Mindanao and structurally identical with it, but both wings with lustrous blue area and streaks less developed on upper and under surface. Both wings with red bands more ochreous, that



on forewing usually broader but that on hindwing narrower and placed more distally than in *coalescens*. Hindwing with the band continuing from vein 8 to tornus nearly the same width, while in *coalescens* it suddenly narrows anteriorly, often vanishing at vein 7. Under surface: both wings with metallic blue basal streaks weaker, the bands ochreous yellow with weaker reddish hue than in *coalescens*.

Male genitalia (Fig. 24). Shape of valva nearly as in *treadawayi* sp. nov. Cucullus broad, nearly flat at apical area, finely setose at the margin of apex. Ventral half of valva broadly sclerotized, at its dorsal margin near middle there is a small but strongly setose area. Aedeagus longer than valva, cornutus very small.

The genitalia of both sexes are almost identical with those of *coalescens*.

Material examined. Holotype, ♂: Negros: Mt Canlaon, ca 1,000 m, v. 1992. Paratypes. Data as holotype, 3 ♂ 2 ♀. In coll. TE: Negros: Mambucal, ii–ix. 1988, 17 ♂ 4 ♀; *ditto*, iv & xii. 1989, 1 ♂ 2 ♀. In coll. TM: Negros: Mambucal, 15. vi. 1989, 1 ♂ (Danny Mohagan); *ditto*, x. 1989, 5 ♂ 2 ♀ (G. L. Garzon); *ditto*, vii. 1990, 2 ♂ 1 ♀; Mindanao: Mt Kitanglad, 16. vi. 1991, 1 ♂ (Dany Mohagan); *ditto*, 12. viii. 1991, 1 ♀; Mt Imbayaw, vi. 1991, 1 ♂; Mindoro: Mt Halkon, 13. iv. 1994, 1 ♀ (Danny Mohagan). In coll. ZFMK: type-locality, 4. ii. 1996, 2 ♂ 1 ♀; *ditto*, 5–10. iv. 1996, 4 ♂, *ditto*, xi. 1991, 1 ♂; *ditto*, v. 1990, 1 ♀; *ditto*, 13. ix. 1990, 1 ♀; *ditto*, 5. iv. 1993, 1 ♀; *ditto*, 1. xii. 1994, 1 ♀; *ditto*, 3. v. 1995, 1 ♀; Mambucal, 800 ft., Negros occ., 20. ix. 1988, 1 ♀; *ditto*, 7. ii. 1993, 1 ♂; Antique, Mt Madsaas, Panay, 20. viii. 1992, 1 ♀; Mt Halcon, 800 m, Mindoro, 7. iv. 1990, 1 ♀ (C. G. Treadaway).

Distribution. Philippines (Mindoro, Panay, Negros).

*M. lamprobasis* Inoue, 1992: 161, figs 30, 34 from Mindanao will here be sunk into *coalescens* Semper, 1901: 621, pl. 65: 1 (**syn. nov.**).

### ***Milionia costidepressa* sp. nov.** (Fig. 17)

Male. Wingspan 47–56 mm. Antenna strongly ciliated. Frons, vertex, thorax and abdomen above shining strongly with metallic blue. Wings elongate, ground colour velvety black, spangled with purplish blue. Forewing with costa protuberant near base, then concave; broadly streaked with lustrous blue at cell and below vein 1, hindwing with basal half strongly shining with the same colour, its outer margin straight from subcosta to vein 3. Forewing with scarlet postmedian fascia straight from costa to vein 1, then angled and downcurved, reaching hindmargin a little proximal to tornus. The width of the fascia is variable, often a little narrower than in the holotype illustrated here. Under surface nearly same as upper, but forewing with hindmarginal area paler and the band becoming orange there, hindwing with blue area posteriorly extended to near tornus. Often basal one-fourth thickly covered with metallic scales.

Male genitalia (Fig. 25). Valva ample, costa straight. Tegumen thickly covered with long deciduous flat spines at dorsal area. Cucullus thinly setose, digitate harpe covered with spines, placed at middle below costa and a band-like setose area continuing from near harpe to base. Valva with a broad triangularly sclerotized area from sacculus to harpe, a line of setae at dorsal part and a long row of setae at ventral part near distal margin of the sclerotization. Aedeagus nearly as long as valva, cornutus very small.

Female. Wingspan 48–56 mm. Shape of forewing normal, without costal concavity.



Colour and maculation identical with male.

Material examined. Holotype, ♂: Mindanao: Mt Imbayaw (or Imbayao), Bukidnon, vi. 1991. Paratypes. Mindanao: type-locality, 31. viii. 1988, 3 ♂ 1 ♀, Collection C. G. Treadaway, ex ZFMK; type-locality, vi. 1991, 1 ♂; Negros: Mt Canlaon, viii. 1988, 1 ♂. In coll. TE: type-locality, 5. v. 1991, 1 ♂; *ditto*, 10–12. vi. 1991, 6 ♂; Mt Kitanglad, 23. xi. 1991, 1 ♀; Mt Canlaon, viii. 1988. In coll. TM: Mindanao: Mt Kitanglad, 16–27. xi. 1991, 4 ♂; *ditto*, 1–11. xii. 1991, 3 ♂; Mt Malingdang, vi. 1991, 1 ♂; type-locality, vi. 1991, 5 ♂ 1 ♀. In coll. ZFMK: type-locality, 800 m, 31. viii. 1988, 10 ♂ 1 ♀; *ditto*, 700 m, 29. viii. 1988, 1 ♀; *ditto*, 31. viii. 1989, 2 ♂; *ditto*, 1,000 m, 6 iv. 1990, 1 ♂; Mt Kitanglad, 8. ii. 1995, 1 ♂; *ditto*, 8. iii. 1995, 1 ♀; *ditto*, 7. x. 1996, 1 ♂; Mt Kalatungari, 14. v. 1998, 1 ♀; Mt Tagubod, 6,000 ft, Davao del Norte, 8. x. 1996, 3 ♂ (C. G. Treadaway).

Distribution. Philippines (Negros, Mindanao).

## References

- Bethune-Baker, G. T., 1910. Descriptions of new species of Heterocera from New Guinea. *Ann. Mag. nat. Hist.* (8) 6: 441–458.
- , 1915. Descriptions of new species of Lepidoptera from Africa and the East. *Ann. Mag. nat. Hist.* (8) 16: 186–203.
- Holloway, J. D., 1993. The moths of Borneo: Family Geometridae, subfamily Ennominae. [= *The Moths of Borneo*, Part 11]. *Malay. Nat. J.* 47: 1–309, pls 1–19, 593 figs.
- Inoue, H., 1992. Twenty-four new species, one new subspecies and two new genera of the Geometridae (Lepidoptera) from east Asia. *Bull. Otsuma Wom. Univ., Home Econ.* 28: 149–188.
- , 1999. A new name for the Bornean subspecies of *Milionia fulgida* Vollenhoven (Geometridae, Ennominae). *Trans. lepid. Soc. Japan* 50: 16.
- Prout, L. B., 1922. New Geometridae from central Ceram. *Bull. Hill Mus. Witley* 1: 279–299.
- , 1923. New Geometridae in the Tring Museum. *Novit. zool.* 30: 191–215.
- Rothschild, W., 1895. On *Milionia* and some allied genera of Geometridae. *Novit. zool.* 2: 493–498.
- Rothschild, W. & K. Jordan, 1905. On some new Lepidoptera discovered by A. S. Meek in British New Guinea. *Novit. zool.* 12: 448–478.
- , 1907. Lepidopteren aus Neu-Guinea. *Dt. ent. Z.* 1907: 189–198.
- Semper, G., 1901. Familie Geometridae. In *Die Schmetterlinge der philippinischen Inseln*. Zweiter Band: Die Nachfalter, Heterocera: 601–634, pls 64, 65. Wiesbaden.

## 摘要

*Milionia* 属 (シャクガ科エダシャク亜科) の9新種と2新亜種 (井上寛)

*Milionia* 属は主に昼飛性で金属光沢に輝く美しい種を含む属で、インド・マレーからニューギニア方面に90種近くが知られている。最も繁栄しているのはニューギニアと周辺の島々で、日本では *M. basalis pryori* Druce キオビエダシャクだけが南西諸島に分布しているに過ぎない。

本文では、スラウェシから1種、バリ島やジャワから1種、フィリピンから3種、イリアンジャヤ(西イリアン)から4種の9新種と2新亜種を記載した。

(Accepted August 12, 1999)